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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,947	11/13/2003	Bak-Gu Lee	Q77842	6726

23373 7590 05/29/2008

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EXAMINER	
LANIER, BENJAMIN E	

ART UNIT	PAPER NUMBER
2132	

MAIL DATE	DELIVERY MODE
05/29/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/705,947	LEE ET AL.	
	Examiner	Art Unit	
	BENJAMIN E. LANIER	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 February 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08 February 2008 has been entered.

Response to Amendment

2. Applicant's amendment filed 08 February 2008 amends claims 1, 3-6, 8, 9, 11. Applicant's amendment has been fully considered and entered.

Response to Arguments

3. Applicant argues, "nowhere does Kempf disclose or suggest that a binding update packet is encoded using an authentication key generated by a mobile node." This argument is not persuasive because claims require the authentication key to be generated by the router, and therefore, since the home agent in Kempf generates the address based key ([0107]), the claims have been met.

4. Applicant argues, "Kempf still does not satisfy the features of claim 4, as claim 4 recites that a packet converter passes the packet without converting the source address included in the packet, only when the binding information does not exist in the data storage unit." This argument is not persuasive because the entire point of binding updates is to map the location of a mobile node to the home address of that mobile. In the instance that that mobile node has not moved,

and therefore would not require a binding update as claimed, no address conversion would take place since there is no care-of-address to substitute.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 4, 6, 9, 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

7. Referring to claims 1, 6, 11, the specification does not support the correspondent nodes are not mobile IPv6 nodes. The specification specifically recites that the correspondent nodes have general IPv6 functionality (Page 9, paragraph 42).

8. Referring to claims 4, 9, the specification does not support passing the packet without converting the source address included in the packet, only when the binding information does not exist in the data storage unit. The specification mentions passing the packet without converting, if the binding information does not exists, but does support only when the binding information does not exist as claimed.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 1, 3-6, 8-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

11. Claim 1 recites the limitation "the binding update packet" in line 20. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 1 recites, "a packet monitoring unit, which outputs an authentication request packet requiring authentication of the mobile node when the packet transmitted from the first interface is the authentication request packet," and "when the packet received from the first interface is a binding update packet encoded using the authentication key generated by the mobile node according to the authentication key generation token the packet monitoring unit outputs the binding update packet to the controller," which renders the claim indefinite because the claim limitations do not define what the packet monitoring unit does if the packet transmitted from the first interface is not an authentication request packet or a binding update packet.

13. Claim 3 recites, "the controller controls the packet converter, so that the packet converter converts the source address of the packet into the home address of the mobile node and outputs the converted address, when the binding information exists in the data storage unit," which renders the claim indefinite because the claim limitations do not define what the packet converter does if no binding information exists in the data storage unit. The limitations of claim 4 remedy the above mentioned indefiniteness.

14. Claim 5 recites, "the controller controls the packet converter, so that the packet converter converts the destination address of the packet into a foreign address of the mobile node, when the destination address is the home address of the mobile node and the home address is bound with

the foreign address of the mobile node," which renders the claim indefinite because the claim limitations do not define what the packet converter does if the home address of the mobile node is not bound with the foreign address of the mobile node.

15. Claim 6 recites, "when the packet transmitted from the mobile node is the authentication request packet requiring authentication of the mobile node," which renders the claims indefinite because the claim limitations do not define what the packet monitoring unit does if the packet transmitted from the first interface is not an authentication request packet.

16. Claim 8 recites, "when the same binding information as the binding information included in the packet transmitted by the mobile node exists in the stored binding information," which renders the claim indefinite because the claim limitations do not define what the packet converter does if no binding information exists in the data storage unit. The limitations of claim 9 remedy the above mentioned indefiniteness.

17. Claim 11 recites, "when the packet transmitted from the mobile node is the authentication request packet requiring authentication of the mobile node," which renders the claims indefinite because the claim limitations do not define what the packet monitoring unit does if the packet transmitted from the first interface is not an authentication request packet.

18. Claim 1 requires the authentication key to be generated by the controller of the router and by the mobile node, which renders the claim indefinite because it is unclear how the authentication key used to encode the binding update is differentiated from the key generated by router or the mobile node.

19. Claims not specified are rejected because of their dependence on the above mentioned claims.

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

22. Claims 1, 6, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempf, U.S. Publication No. 2003/0211842, in view of Sundquist, U.S. Publication No. 2004/0136382. Referring to claims 1, 6, 11, Kempf discloses securing binding updates using address based keys wherein routers functioning as home agents for a mobile node, interface with mobile nodes and correspondent nodes to a core network ([0017]), which meets the limitation of a router for transmitting a packet between a mobile node and correspondent nodes. The binding updates are sent when the mobile node detects that it has moved outside its home network ([0018] & [0023]), which meets the limitation of a foreign link area. The home agent can assign the home address (HoA) and send the home address (HoA) to the mobile node ([0023]), which meets the limitation of a data storage unit, which stores data for generating an authentication key generation token. The home agents transmits messages using the destination address contained in the message

header ([0112] & Figure 1), which meets the limitation of a first interface, which receives and transmits a packet to a destination address stored in a header of the packet. The mobile node sends a request to the home agent for parameters to establish a security association with the home agent (Figure 2, 200 & [0054]-[0055] & [0067] & [0107]-[0108]), which meets the limitation of a packet monitoring unit, which outputs an authentication request packet requiring authentication of the mobile node if the packet transmitted from the first interface is the authentication request packet. The home agent can assign the home address (HoA) and send the home address (HoA) to the mobile node ([0023]), which meets the limitation of a controller, which receives a packet from the packet monitoring unit, generates an authentication key generation token with reference to the data for generating an authentication key generation token stored in the data storage unit, the first interface receives and transmits the authentication key generation token to the mobile node. The home address (HoA) is used by the home agent and the mobile node to generate the address based keys of the mobile node ([0025] & [0029]) & [0067]), which meets the limitation of generates an authentication key using the authentication key generation token, stores the authentication key generation token and the authentication key in the data storage unit, and outputs the authentication key generation token to the first interface. The mobile node uses the address based keys to establish a security association with the home agent, and when the mobile nodes transmits a binding update message, which signals a new care of address, to the home agent, the message is secured with the address based keys ([0018]-[0021] & [0053] & [0112]), which meets the limitation of wherein if the packet received from the first interface is a binding update packet encoded using the authentication key generated by the mobile node according to the authentication key generation token, the packet monitoring unit

outputs the binding update packet to the controller, and the controller extracts binding information, including a home address of the mobile node and a foreign address of the mobile node provided in a foreign link area, from the binding update packet using the authentication key stored in the data storage unit, and stores the extracted binding information in the data storage unit. Kempf does not specify that the correspondent nodes are not IPv6 compatible. Sundquist discloses a system provisioning mobility of traffic using IPv6 compatible nodes and IPv4 compatible correspondent nodes ([0036]), which meets the limitation of the mobile node is a mobile IPv6 node and the correspondent nodes are not mobile IPv6 nodes. It would have been obvious to one of ordinary skill in the art at to provide the system of Kempf for IPv4 compatible nodes in order to provide mobility for IPv4 traffic as taught by Sundquist ([0009]).

23. Claims 3-5, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kempf, U.S. Publication No. 2003/0211842, in view of Sundquist, U.S. Publication No. 2004/0136382, and further in view of Chen, U.S. Patent No. 6,829,483. Referring to claims 3, 8, Kempf discloses securing binding updates using address based keys wherein routers functioning as home agents for a mobile node, interface with mobile nodes and correspondent nodes to a core network ([0017]). The binding updates are sent when the mobile node detects that it has moved outside its home network ([0018] & [0023]). Kempf does not disclose that the home agent removes the care-of address in the packet header of a message transmitted from a mobile node and replaces the address with the home address. Chen discloses that the home agent receives a message from a mobile node in a foreign network that includes the care-of address for the mobile node in source field of the message header (Col. 4, lines 24-32). Once received the home agent replaces the care-of address with the home address for the mobile node in the source field of the

message header (Col. 4, lines 33-38), which meets the limitation of a packet converter, which receives a packet output from the packet monitoring unit, and converts a source address of the packet from the foreign address of the mobile node to the home address of the mobile node and outputs the converted address, according to a control given by the controller, the packet monitoring unit searches for the header of the packet received from the first interface, extracts and outputs binding information included in the packet header to the controller, and outputs the packet to the packet converter, the controller controls the packet converter, so that the packet converter converts the source address of the packet into the home address of the mobile node and outputs the converted address, if the binding information exists in the data storage unit. The home agent then transmits the re-addressed message to the correspondent node associated with the address in the destination field of the message header (Col. 4, lines 35-43), which meets the limitation of a second interface, which receives the packet output from the packet converter, and transmits the packet to a correspondent node, according to an address of the correspondent node stored in the header of the packet. It would have been obvious to one of ordinary skill in the art at the time the invention was made for the home agent of Kempf to convert the care-of address in header of messages received from a mobile node in a foreign network, to the home address of the mobile node, in order to prevent a firewall or egress filtering procedure from rejecting the message because the source address is different from the home address as taught by Chen (Col. 2, lines 1-4).

Referring to claims 4, 9, because Kempf does not specify that the home agent changes the source address in the message header of messages received from mobile nodes, it meets the limitation of the controller controls the packet converter, so that the packet converter passes the

packet without converting the source address included in the packet, only if the binding information does not exist in the data storage area since the home agent of Kempf never converts the source address.

Referring to claims 5, 10, Kempf discloses securing binding updates using address based keys wherein routers functioning as home agents for a mobile node, interface with mobile nodes and correspondent nodes to a core network ([0017]). The binding updates are sent when the mobile node detects that it has moved outside its home network ([0018] & [0023]). Kempf does not disclose that the home agent removes the home address in the destination address field of messages destined for the mobile node, and replaces the home address with the care-of address. Chen discloses that the home agent receives all messages destined for the mobile node and replaces the home address of the mobile node, in the destination field of the message header, with the care-of address of the mobile node (Col. 3, lines 25-32 & Col. 4, lines 13-21), which meets the limitation of the packet monitoring unit outputs the destination address stored in the header of the packet received through the second interface, to the controller, and outputs a packet received from the packet converter, the controller controls the packet converter, so that the packet converter converts the destination address of the packet into a foreign address of the mobile node, if the destination address is the home address of the mobile node and the home address is bound with the foreign address of the mobile node, the packet converter converts the destination address stored in the header of the packet transmitted by the correspondent node into the foreign address of the mobile node, according to a control given by the controller. The re-addressed message is then output by the home agent (Col. 3, lines 31-32), which meets the limitation of outputs the converted packet to the first interface.

Conclusion

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN E. LANIER whose telephone number is (571)272-3805. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Benjamin E Lanier/
Primary Examiner, Art Unit 2132